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Working Group on Household Surveys

Addis Ababa, 16-20 October 1989

THE WORLD BANK'S LIVING STANDARDS MEASUREMENT STUDY (LSMS) PROGRAM

(Contributed by the World Bank)

Contents

		Paragraphs	Page
I.	INTRODUCTION	1- 8	1- 3
II.	LSMS SURVEYS	9-32	3-12
	A. Multi-topic integrated questionnaire	11-13	3- 4
	B. LSMS Surveys: Survey design and Implementation	14-18	5- 7
	C. Countries where LSMS Surveys have been or will be Implemented	19-20	7- 8
	D. Assessment of the LSMS in achieving its objectives	21-27	8-11
	E. Adaptability of LSMS surveys to other countries: transferability and flexibility	28-29	11-12
	F. Policy analysis	30-31	12
	G. Future plans	32	12

I. INTRODUCTION

1. In the 1970s governments, development agencies and other members of the development community became increasingly interested in the following question: Does economic growth in developing countries significantly raise living standards, especially those of the poor? This question was often difficult to answer due to lack of reliable data for assessing the distributional impact of macroeconomic development policies. Even in countries with well functioning statistical systems, with a flow of data from ongoing sample surveys of households, it was not possible to assemble relevant data to address research and policy concerns. In most developing countries, household surveys were, and continue to be, designed to collect data on a topic by topic basis. Integration of results from such single topic surveys is difficult given differences in sample sizes, underlying concepts, reference periods, geographical coverage, etc. Additionally, timely availability of data from sample surveys of households was not commonly the case as data processing constraints affected timelines. In brief, the demand for data was not matched by supply. It was against this background that the Bank initiated an effort to establish data collection systems in developing countries that would rapidly collect and disseminate information on socio-economic conditions.

2. Emphasis was placed on data that would bear directly on current policy issues, rather than on the measurement of living conditions per se. The activities stimulated and implemented by the project launched by the Bank were threefold: 1. Collection of high quality data from specially designed integrated household surveys; 2. Rapid publication of general descriptive data for immediate use by policy makers; 3. Analysis of the data to address specific policy issues. This third aspect was to go beyond measurement and employed regorous economic and statistical techniques to analyze household and individual behaviour with special emphasis on how that behaviour is affected by government policies. The design of household surveys to be canvassed was such that the data would be particularly suited for the analysis of a variety of important policy issues, including distributional and poverty questions such as the effect of macroeconomic development policies on the poor.

3. The second major objective was to strengthen national capabilities to conduct household surveys that generate high quality, policy relevant data in a timely and cost-effective manner. It was in this context that the Bank launched the Living Standards Measurement Study (LSMS) program.

4. The need for comprehensive data for purposes of policy formulation, evaluation and for decision making transcends particular countries or geographic regions. That need is greatest in countries of Sub-Saharan Africa.

5. In the context of the Bank's dual role as a development institution, and as the international agency most concerned with assisting member countries through financial programs and providing macroeconomic and sector specific advice, analysis of country situations is an important dimension of its work. The Bank's role is particularly critical in countries of Sub-Saharan Africa where since the beginning of the eighties, a growing number of countries have embarked on structural adjustment programs aimed at stabilizing the economy in the short to medium term while creating the conditions for a resumption of self-sustained growth over the longer term. While the first structural adjustment programs largely focused on the objectives of restoring macroeconomic equilibria and of reducing incentives distortions, there is now a growing concern among Governments in the Region, within the Bank and generally within the international donor community about the social implications of the structural adjustment process.

6. A major concern relates to the transitional cost of adjustment for vulnerable groups, in particular the reduction in income, employment and access to social services which is generally experienced in the intervening period when the contractional impact of demand management policies outweighs the expansionary effect from policies directly stimulating economic activity. A second concern relates to the longer-term social implications of the structural adjustment process, in particular the need to foster the participation of the poor in the process of economic growth by increasing their access to employment opportunities and income-generating assets, and raising the productivity of their assets, both physical and human.

7. In most countries of Sub-Saharan Africa, however, the limited availability of reliable data on income distribution and welfare indicators, the limited capability to carry out quantitative and qualitative assessments of the evolution of social conditions and the relative weakness of institutions in charge of macroeconomic management and co-ordination make it particularly difficult to turn these concerns into operational policies and programs. To achieve this objective, there is a powerful argument for a generic, region-wide endeavor for the development and maintenance of statistical data bases on the social dimension of structural adjustment, the realization of studies on the socioeconomic implications of adjustment and the reinforcement of the institutional capability of governments to identify, design and monitor poverty alleviation programs and projects to be implemented in conjunction with structural adjustment programs.

8. Against this background, the World Bank has launched, in collaboration with the UNDP Regional Program for Africa, the African Development Bank and other multilateral and bilateral institutions, a regional project called the Social Dimension of Adjustments (SDA) Project aimed at strengthening the capacity of governments to integrate the social dimension in the design of their structural adjustment programs. To this end, the SDA Project has been designed to provide support to participating governments to develop their capacity to design and monitor poverty alleviation programs and projects, to assess the impact of structural adjustment programs over time on population groups, and to design and maintain, in the framework of their national systems, adequate statistical data, in particular through the gathering of household data in an integrated manner.

II. LSMS SURVEYS

9. The LSMS was conceived with these broad purposes in mind: first, the collection of integrated data that capture different dimension of levels of living so as to be relevant for policy analysis of relationships between these different dimensions, second, the provision of these data in a timely fashion and third, with an analytical framework to support policy and decision making.

10. A conceptual framework was developed for the policy analysis of levels of living from which the data content of the surveys was derived. The latter was then translated into a questionnaire and a data collection system put in place that was consistent with the conceptual framework and met the aforementioned goals. As such, the living standards surveys have five essential characteristics: (a) the survey instrument takes the form of a multi-topic integrated questionnaire; (b) survey and questionnaire design relies on interaction between data producers and data users from the beginning; (c) the survey explicitly embodies an over-time dimension; (d) quality control is at the forefront of all operations; and (e) data processing is set as an integral part of survey operations.

A. Multi-topic integrated questionnaire

11. Once it is recognized that the concept of levels of living is fundamentally multi-dimensional in nature, it becomes evident that data need to be collected on all, or at least the most important, of these dimensions. In practice, this can be achieved in one of two ways. The first (and most conventional way) is to collect data on each dimension separately through the use of expenditure surveys, labor force surveys, income surveys, health surveys and so on. To be useful for policy analysis, however, these different data must be integrated. This makes it

essential that such data have to come from one master sample of households or, at least, provide sufficient overlap in households covered so that statistical links between the different surveys can be traced and their implications explored. This requires a relatively sophisticated statistical and data processing system, which only a few developing countries possess. Moreoever, such experience as they have had in this area has been generally disappointing. While integration of different surveys was eventually achieved in a few instances, time lags between data collection and data integration exceeded the already long delays typical in the processing of single topic surveys. As a result of such experience, an alternative approach, i.e., doing the integration at the data collection stage, becomes attractive. This includes obtaining information on the different dimensions of levels of living from the same sample of households. The main practical obstacle to this procedure is that it usually entails a lengthy and complicated questionnaire, which in turn requires skilled enumerators and a considerable amount of patience and stamina on the part of enumerators and respondents alike in collection of the information.

12. Integration at the data collection stage was the approach chosen by the living standards surveys (LSS). The choice was primarily based on the negative experience with past alternative approaches and on the recognition that in such approaches the bottleneck hindering speedier data processing and integration was a major lack of processing capability (hardware, software and programmers) which could not be alleviated in the near future, except at prohibitively high cost and with massive investment. In other words, the use of one topic surveys with ex post data integration could not in practice meet the essential LSS requirement of timeliness in data production.

13. Having thus concluded that integration at the collection stage was needed, several steps were taken to reduce the negative features of integrated surveys. First, each module was scrutinized to determine the minimum number of survey questions that would be necessary for analysis of the specific topic in the context of levels of living. Second, the administration of the questionnaire was split in two rounds, two weeks apart. The reason for the split was primarily quality control for the collection of expenditure information, but it also had the considerable side benefit of reducing the length of each interview. Moreover, in the administration of the questionnaire, emphasis was placed on talking with individual respondents in the household when individual information was being asked (i.e., the use of proxy responses was minimized). Thus, the actual time during which a particular household member was interviewed was not unduly long. Nevertheless, the LSS instrument is still relatively complex and requires more than the usual amount of preparation and training of enumerators and supervisors.

B. LSMS surveys: Survey design and implementation

14. Countries in which LSMS surveys have been implemented use a comprehensive set of questionnaires, some of which are modified to fit specific country characteristics. The comprehensive and integrated nature of these questionnaires is demonstrated by the topics covered:

Household Questionnaire

- Housing, both a physical description (including measurement of floor area) and money spent on rent, utilities and other housing related expenses;

- Educational attainment and current school enrollment of household members (including children away from home) and the amount of time spent in school during the past seven days by those currently enrolled;

- Economic activities, including time at work in the past 12 months and past 7 days, money received from work, non-monetary receipts for work, for both primary, secondary and any other jobs, and also information on the search for work or reason why not searching (for those not working), the search for additional or new work (for those now working), work history and work done in the home;

- Migration, as well as reasons for migrating;

- Agriculture and animal husbandry, including information on land owned and land rented or sharecropped, crop by crop acreage and output, expenditures on agricultural inputs, and equipment owned;

- Non-agricultural household businesses, with data on revenues and expenditures for as many as three household-operated businesses;

- Food and non-food expenditures, including food grown and eaten by the household;

- A listing of household durable goods owned;

- Fertility and birth history of one randomly selected woman household member of child-bearing age;

- Income from other sources not already listed above;

- Savings and loans contracted by household members;

- Anthropometric data, i.e., height and weight of all household members.

Community Questionnaire (rural areas only)

- Characteristics of the local economy, with special emphasis on the physical infrastructure (road conditions, electrification, extension work, etc.) types of crops grown and agricultural wage rates;

- Distance to and characteristics of local primary and secondary schools;

- Distance to and availability of local health services.

Price questionnaire

- Local market prices of selected food and non-food items, medicines and agricultural inputs.

15. The survey design has many features which reflect the need to produce high quality data. The sample size chosen is varied depending on country situations, survey capabilities, and degree of precision required. Recent LSMS surveys have added flexibility. An essential feature of survey operations is that survey personnel receive intensive training at the individual level. Rigorous training of all survey personnel consists of four weeks of full day sessions, including two weeks of practice interviews. Supervision of data collection is intense - for most LSMS surveys there is one supervisor for every two interviewers and each completed questionnaire is carefully checked by the supervisors. In addition, every fourth household is reinterviewed by the supervisor to check whether the interviewers are adequately carrying out their duties as given in the training manuals. The two-stage sample design selects groups ("clusters") of households which are interviewed by a team of one supervisor and two interviewers over two separate weeks. For each of these two weeks the team actually stays in the village or urban area so that all selected respondents can be traced and interviewed at times which are convenient for them. The data are checked for consistency and completeness by a computerized data entry program. Any errors detected in the first round require the interviewer to return to the household to resolve inconsistencies and finish incomplete questionnaires.

16. The approach adopted overcomes many of the problems encountered in canvassing household surveys in the past. Long periods of time, often several years, to clean the data and prepare statistical reports has been a constraint. Recent advances in computer technology have created new opportunities for survey design, and LSMS surveys are among the first to take advantage of these advances. In fact, LSMS surveys use personal computers at all stages of survey operations. First, when the questionnaire for a particular country is being designed, all

pages of the questionnaire are written on a PC and stored on diskettes using computer software specially designed for that purpose. Consequently, after initial field testing of prototype questionnaires, the questionnaire can be modified, literally overnight, and these modifications can be tested the next day.

17. Secondly, after the questionnaire is finalized a data entry system is developed that allows for immediate entry of the data from the filled in questionnaire to diskettes. The data entry program is designed to perform many consistency checks at the time of data entry. These checks include simple coding checks, range checks of continuous variables, and more complicated tests on the internal consistency of the data, both within and between questionnaire modules. After the first week in any village, the team returns to regional field offices where the PC is located. During the next week, all the data from the first week's work are entered and checked by the data entry program. The following week the team returns to the same village for a second visit. During this visit, the second part of the household questionnaire is filled out and all errors detected by the data entry program from the first week's work are corrected.

18. Thirdly, with all the data now on diskettes, dissemination of results can take place in a matter of weeks after the last households have been interviewed in the field. For example, the results of the first six months of the Cote d'Ivoire Living Standards Survey were published within two months after the last interviews were completed. Finally, with the continuing advance of the storage capacity of PCs, they are increasingly being used for the subsequent statistical work and data analysis.

C. Countries where LSMS surveys have been or will be implemented

19. The following six countries have already undertaken LSMS surveys.

(i) Côte d'Ivoire: The Côte d'Ivoire Living Standards Survey (CILSS) began in February, 1985, and has now generated four years of data (1985, 1986, 1987 and 1988). Further surveys will be implemented under the SDA program. The Ivorian Government has decided to keep the survey as a permanent component of its annual data collection efforts, thus providing a successful example of institution building component of the LSMS system. The sample size for each year of the CILSS is 1600 households. One interesting aspect of the Côte d'Ivoire Survey is that half the households in any given year are reinterviewed in the following year - this allows for better analysis of changes in living standards over time.

(ii) Ghana: The Ghana Living Standards Survey (GLSS) began data collection in September, 1987, and has now generated two years of data (1987-88, 1988-89). The survey was originally

intended to run for two years but will be extended up to five years under the SDA program. The Government of Ghana is also planning to integrate this survey with a series of more topic specific surveys, including a more detailed consumer expenditure survey. The GLSS sample size is 3200 households per year.

(iii) Mauritania: The Mauritania Living Standards Survey (MLSS) began data collection in December, 1987. By the end of 1988, the first year of data collection was completed. Under the SDA program, the survey will be extended and modified after an assessment of the first year's efforts. Mauritania is an interesting example in that there existed almost no institutional capacity for undertaking household surveys, so that much of the work involved encompassed a general upgrading of the capability of the statistical office in that country. As in Côte d'Ivoire, 1600 households are covered by the MLSS.

(iv) Peru: The Peru Living Standards Survey (PLSS) collected data for a single year from July, 1985 to July, 1986. The sample size was 5000 households. The Government of Peru plans to undertake this survey every 3 to 5 years.

(v) Jamaica: The Jamaican Government implemented the Jamaican Survey of Living Conditions in August, 1988, and finished two rounds of data collection by August, 1989. This survey is designed to monitor the impact of the Jamaica Social Well-Being Programme (now known as the Human Resources Development Programme) over a period of five years.

(vi) Bolivia: The Government of Bolivia began an initial LSMS survey in urban areas in March, 1989. The current work plan of the Bolivian statistical office calls for a full-scale two year program beginning in 1990. The full survey will include 5000 households per year.

20. Plans are now underway to begin LSMS surveys in Morocco and Pakistan, and preliminary discussions have taken place in Brazil, Colombia, Costa Rica, Guatemala, Trinidad and Tobago, Venezuela, Egypt, Jordan, Kenya, Lesotho, China, Laos and Nepal.

D. Assessment of the LSMS in achieving its objectives

21. The goal of the Living Standards Measurement Study continues to be to provide developing countries and the international development community with the means to assess progress in living standards by enabling those countries to produce integrated and comprehensive, high quality data in a timely and cost-effective way. Based on the experience with the surveys in Côte d'Ivoire and Peru, the overall goals of the program have been met. An independent evaluation of the Côte d'Ivoire survey by the International Statistical Institute's Research Center (The Hague, Netherlands) concluded that: "There are some very important

achievements in the planning of this survey, notably in the use of micro-computers to capture the data collected in the field. The speed with which the results have been produced is impressive, and the organizers are very much to be congratulated on the ways in which they have overcome the difficulties which are inherent in the conduct of any major survey in a Third World country. Everything possible should be done to capitalize on the progress that has been made in extending the survey in future years...."

22. Although there were considerable doubts about the feasibility of collecting data from households on a large number of topics from an extended questionnaire, on the grounds of respondent fatigue and resistance to lengthy interviewing, experience to-date has shown that these fears can be overcome. It had also been contended that respondents in many situations would not be able to respond fully to complex questions. Experience in Côte d'Ivoire and Peru, and preliminary evidence from Ghana, indicate that with proper preparation, lengthy and comprehensive household questionnaires can be successfully administered. In the LSMS surveys, after careful pretesting and experimentation, it was established that the questionnaires could be administered through two interviews two weeks apart. The average interview takes about two or three hours for each of the two rounds. Questions on individuals (e.g., labour force activities and income) are addressed to the specific household members, so that in most cases no one person spends more than one hour being interviewed during a given visit to the household, thus overcoming respondent fatigue.

23. Evidence for the degree to which the questionnaire can be completed with the co-operation of the households selected can be seen by examinig refusal rates, i.e., the proportion of the households who refuse to participate in the survey, and by the number of incompletely filled in questionnaires. In the Côte d'Ivoire survey, only 0.9 per cent of households (14 out of 1600 households in 1985 and 15 out of 1600 households in 1986) refused to participate in the survey during the first two years of its implementation. In Peru explicit data were not collected on refusals, so such cases are subsumed in the "other" category regarding the reason why some households did not participate in the the survey. This other "category" amount to 5.4 per cent of the households (275 out of a sample size of 5000) chosen. In Ghana, on the basis of data for the first seven months of the survey, the refusal rate is less than 1.0 per cent.

24. Further evidence on the ability to complete a long questionnaire comes from the amount of "missing" data from those households for which a questionnaire was completed. In the Peru and Côte d'Ivoire surveys there were only a few instances of missing data - of the items tabulated, the percentage of missing data is never larger than two percentage points, and is usually

less than one tenth of a percent. The intensive training of interviewers and supervisors, and the use of the computerized data entry system, which flags all instances of missing data and instructs the supervisor to have the interviewers return to the household to complete the questionnaire, clearly is beneficial. Obtaining anthropometric measurements on all household members, since some household members may be travelling or not at home for other reasons when the interviews are done, is perhaps the most difficult part of the operation. Yet by assigning a separate team member to undertake this task, the anthropometrist, almost 90 per cent of household members were measured in Côte d'Ivoire.

25. Data quality has been achieved because of the degree to which interviewing is controlled. With one supervisor for every two interviewers, and the data entry program checking not only for missing data but also for implausible or inconsistent data and return visits to the household to obtain accurate responses, it has been possible to maintain quality control. For example, if a child measured by the anthropometrist during the first visit is unusually short or tall for his age, the data entry program flags this and directs the anthropometrist to measure the child again at the next visit. Table 4 reveals that the Living Standards Surveys done in Côte d'Ivoire and Peru had very few cases of inconsistent data after return visits were made to correct errors detected by the data entry program. Another step taken to assure data quality requires that the supervisors themselves are supervised by surprise visits from the core survey team throughout the year. However, the ultimate validation of the data lies in comparisons with data gathered from other sources to see whether the two sources are consistent.

26. Several such checks have been made on the Côte d'Ivoire data which testify to the high quality of the data:

(i) Comparison of aggregate national consumption figures from World Bank estimates of national accounts for 1985 with consumption data (expenditures plus consumption of food produced and consumed by the household) from the first year of the survey are within 5 per cent of each other. Much of the 5 per cent difference probably arises from differences in the coverage of consumption, and sampling errors.

(ii) The area of land planted under various crops, in terms of the proportion of total land area planted matches well with the data from the Ivorian Government's 1981 Agricultural Sector report.

(iii) Data on fertility from the CILSS are very similar to those gathered in the 1980-81 World Fertility Survey conducted in Côte d'Ivoire which used a much larger sample of women.

27. Cost effectiveness of LSMS surveys has been an important consideration. The major recurrent costs involved in LSMS surveys are the salaries of the team members (a typical team has one supervisor, two interviewers, one anthropometrist, one data entry operator and one driver), the maintenance of a vehicle and a personal computer (PC) for each team and the printing of questionnaires and manuals. The recurrent costs per year (including personnel costs of all field teams plus a management team) were approximately $200,000 in Côte d'Ivoire during the first two years and are estimated at about $350,000 per year in Ghana (note that the sample size in the latter survey is twice that of the former). Initial setup costs include the purchase of new vehicles, if none are presently available, of personal computers, of anthropometric measuring equipment and a few smaller items. Obviously, these setup costs depend heavily on the existing survey infrastructure of the country. Cost comparisons are often difficult to make, and have not been made. However, in terms of the wealth of information collected and the vast improvement in timeliness of the data, the costs are considered reasonable. In brief, the costs of an LSMS survey compare favourably against conventional single topic surveys when these factors are taken into account.

E. Adaptability of LSMS surveys to other countries: transferability and flexibility

28. The main issue of adapting LSMS survey technology to other countries concerns the modification of existing LSMS household, community and price questionnaires to meet the needs of another country. Questions which are relevant in one country may have little meaning in another, and new questions may have to be developed to gather data relevant to the countries concerned. Finally, as certain government policies and programs may be of special interest, questions may be asked with specific references to such programs. In each survey for Bolivia, Jamaica and Mauritania, such modifications were made. In the more recent surveys, the part of the household questionnaire dealing with agriculture and self-employment income were subjected to major revision. Minor changes were also made to other sections of the questionnaires.

29. The computer programs that create pages of the questionnaires allow for quick adaption of existing questionnaires to new countries, further demonstrating the flexibility of LSMS technology. Starting LSMS survey in a new country is of course considerably facilitated if a survey infrastructure exists. In such circumstances, the survey can be integrated into an existing survey program. Prior survey

experience can be drawn upon to speed up the transfer process as well as maintain the quality of the entire exercise. Even in situations, as in the case of Mauritania, where survey capability has to be built up from almost nothing, the lead time is less than a year.

F. Policy analysis

30. A wide array of policy oriented research and reports have been carried out using the data from Côte d'Ivoire and Peru. The first output from both the Côte d'Ivoire and Peru surveys were statistical abstracts produced jointly by the respective national statistical offices and the World Bank.

31. Following the statistical abstract, among the most important papers to initially appear are detailed profiles of the distribution of welfare, as measured by consumption expenditures, for each country. These have already been completed for Côte d'Ivoire and Peru. Such studies are then followed by more specific papers on a variety of topics. To-date a total of 52 working papers have been issued. Copies are available from the Bank. Topics include the possible effect of policies on the poor, the effect of instituting user fees on use of medical care services and school enrolment, productivity of labour in the informal (self-employment) sector, the causes of poor nutritional status of children, and the role of women in labour markets. Some of this research is currently being used by governments and by international organizations in designing more effective sectoral and national development policies.

G. Future plans

32. Further work is being done on several fronts by the LSMS Unit in the Bank's Population and Human Resources Department to improve LSMS methodology and facilitate its dissemination. Additional documentation is being developed to explain in detail various aspects of LSMS technology in order to provide the international statistical community with information on how they can undertake LSMS surveys in their own countries. Second, renewed attention is being given to how LSMS surveys can be integrated into existing survey programs, such as the United Nations' National Household Survey Capability Program (UNNHSCP). Third, dialogue is continuing with the academic and development community on improving policy analysis with LSMS data, so that the quality of research using these surveys can be improved and the data collected are of the type required by economists and other researchers to undertake methodologically rigorous policy oriented research.

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UNITED NATIONS DEVELOPMENT PROGRAMME
REGIONAL PROGRAMME FOR AFRICA: FOURTH CYCLE

Assessment of Social Dimensions of Structural Adjustment in Sub-Saharan Africa

The Social Dimensions of Adjustment Project and Its Implications for Statistics

(Contributed by the World Bank)

Contents

		Paragraphs	Page
I.	DEVELOPING A NATIONAL INFORMATION SYSTEM	1-15	1- 7
	A. Objectives of the SDA Project	1	1
	B. Operations of the SDA Project	2- 4	1- 2
	C. Improving the Dialogue between Data Collectors and Users	5- 7	2- 3
	D. Development of a Hierarchical Information system	8-15	3- 7
II.	DATA COLLECTION AND ANALYSIS AT THE HOUSEHOLD LEVEL	16-38	7-13
	A. Background: The Living Standards Measurement Survey	16-21	7- 8
	B. The SDA Household Survey Program	22-29	8- 9
	C. The Intensive Household Survey (IHS)	24-30	9-11
	D. The Priority Information Collection Survey (PIC)	31-34	11-12
	E. The Relationship between the IHS and the PIC	35-37	12-13
	F. Community level surveys	38	13
III.	CONCLUSIONS	39-43	14
	REFERENCES		15

I. DEVELOPING A NATIONAL INFORMATION SYSTEM

A. Objectives of the SDA Project

1. The SDA project was established in 1987 as a joint venture between the UNDP Regional Programme for Africa, the African Development Bank and the World Bank with the objective of assisting participating governments in integrating social dimensions in the design of their structural adjustment programs and development plans. While structural adjustment programs can help to strengthen and rehabilitate economies at the national level, it is recognized that there may be high social costs. In particular, a number of sub-groups of the population, the vulnerable groups, may stand to be losers in the process - either in the short and medium term, or else in the long term. The SDA project aims to ensure that these groups are identified and protected, both during and after the adjustment process. The keynote principle underpinning the project is "growth with equity".

B. Operations of the SDA Project

2. The SDA project operates at two levels; at the regional level and at the country level. At the regional level, the project unit at the World Bank has prepared a Policy and Operational Agenda aimed at ensuring that poverty reduction policies and programs are fully integrated into structural adjustment programs and development plans. At the country level, 26 African countries have now requested participation in the project.

3. Once a country has joined the program, one of the first steps is the preparation of a Country Assessment Paper. This document contains an initial poverty profile of the population and the identification of key policy issues, based on existing information. The SDA project unit then assists with the preparation of a Country Operational Strategy based on three essential components:

(a) A policy component, including: the development of macro economic strategies aimed at growth with poverty reduction; the design of core public expenditure programs targeted at the poorer segments of the population; and the encouragement of processes that foster the participation of community groups and NGOs in the design and follow-up of socio-economic policies and programs.

(b) A programs and projects component: including the design of specific interventions aimed at protecting vulnerable groups in the course of adjustment and the design of specific programs and projects to foster the participation of the poor in socio-economic activities.

(c) An institutional development component: including the strengthening of institutions responsible for socio-economic policy formulation, strengthening government capacity in the area of social policy planning and programming, policy analysis, and development of statistical databases for assessing the evolution of living standards of different population groups during adjustment.

4. In this paper, we shall be primarily concerned with the institutional building aspects of the project which focus on the strengthening of national statistical and analytical capabilities.

C. Improving the dialogue between data collectors and users

5. One of the features of the recent years of austerity in Africa has been the cuts in public expenditure on statistical services. Statistical offices have been hard hit and a number of important statistical and survey programs launched in the 1970s have, in the 80s, been halted due to lack of funds. One argument put forward to explain the stagnation of statistical services is that such services have traditionally been supply driven rather than demand driven. Statistical offices have developed survey programs without proper reference to the potential users of the data and a dichotomous situation has occurred in which, on the one hand users have complained that the sort of data they need are not available, and on the other hand, the statistical offices have been forced to suspend a number of data collection activities for lack of funds and interest.

6. The logic underpinning the design of the SDA project encourages the development of a much greater rapport between user and supplier in that it starts with a clear identification of the objectives, i.e., the maintenance of key social expenditures within the framework of the adjustment process and the support of vulnerable groups of the population. It then works backwards towards the recognition that, in order to achieve this objective, an ongoing program of planning and analysis must be established, and for this, a basic information system is essential. Theoretically such information could be already available in a country, but there are few African countries at the moment where the statistical system can be said to be adequate for this purpose.

7. When a country joins the SDA program, it is a prerequisite that the necessary mechanism is set up from the start to ensure regular dialogue and communication between planners, analysts and statistical offices. The vehicles for this may be an SDA Task Force or a Users' Committee. The composition of such a group will obviously vary from country to country but will include representatives from both the government and private sectors

(including universities and research establishments). It is also important to ensure that each social sector (education, health, employment, etc.) is adequately represented. The group is expected to meet regularly to review: the needs of the planners/policy makers, the analytical work that will be required, and the data that will be needed to support such analysis. Without the existence of such a committee, it is felt that the SDA survey program could rapidly become a sterile exercise.

D. Development of a hierarchical information system

8. The monitoring and evaluation of the social effects of macro economic policy on different sub-groups of the population is a massive task which needs to be clearly conceptualized. It also requires the development of a carefully elaborated program if it is to succeed. The SDA project has prepared a basic document, the Conceptual Framework Paper (CFP), in which the theoretical, empirical and policy framework underpinning the SDA program is described. This paper distinguishes between three distinct but interlinked levels of the economy, the macro, meso and micro. The definition of the macro level is standard and relates to economic activities at the national level - monetary and fiscal policy, national economic programs, etc. Adjustment policies and programs are conceived and executed at this level.

9. The more unusual feature of the CFP classification however is the introduction of the concept of the meso level. This essentially is an intermediary level covering the socio-economic and institutional infrastructure, and factor and product markets. It is a key level in that it is the first level at which the effects of macro-economic policy will be felt. For example, if one wished to observe the effects of cuts in government expenditure in, say, the health sector, it would be in the hospitals and health centers located at the meso level, that such cuts would first be felt, probably through a drop in staff numbers, medicines, preventative care programs, etc. Similarly if the adjustment policy involved the liberalization of agricultural prices, it is in the markets that the effects will first be noted. Health facilities and markets, as well as schools, enterprises providing employment, transport services, and many other facilities and services are all to be found at the meso level.

10. The last level is the micro level, that is at the level of the small informal enterprise, household or individual. Having first had an effect at the meso level, adjustment policies then produce an impact at the micro level. These impacts can be quite complex. The impact of cuts in government expenditure on health will not only have a direct impact on the household's health status, but will also affect its employment and earnings

potential. Similarly higher food prices will affect a household in a number of different dimensions, including income, expenditure, health, etc. Most important is the fact that different households, or household groups will be affected in different ways. For some agricultural households, higher prices will provide a positive impact, for other groups it will be negative. For some groups, the combined effects of different adjustment policies may promote temporary hardship and for others it may pull them irrevocably below acceptable poverty levels.

11. An essential feature of the SDA program is that such impacts are effectively monitored and studied so that suitable compensatory programs can be created for those groups of the population adversely affected. However, in order to do this, and to understand the linkages that operate between macro, meso and micro levels, an adequate information base must be available at each level. This is represented in Table 1.

Table 1

A Hierarchical Information System for the SDA

1 LEVEL	2 SOCIAL DIMENSIONS OF ADJUSTMENT	3 ANALYSIS	4 DATA
MACRO	Policy	Sam-based models	Trade statistics Financial/economic statistics National accounts Consumer Price Index
MESO	Effects	Sectoral Studies: - Poverty - Employment - Migration - Health - Education - Food security - Women in development	Prices Institution studies Community questionnaire
MICRO	Impact	Household and Informal sector: - Poverty - Employment - Migration - Health - Education - Food security - Women in development	Household surveys Informal sector surveys

12. Column 1 indicates the three levels. Column 2 shows the logical linkages extending down from policy execution to effects and impact. Column 3 indicates the type of analysis that may be required at each level to monitor and study activities at that

level as well as the linkages that connect them. At the national level, the means of integrating social criteria more fully into the national planning process involves moving beyond a simple analysis of absolute national income levels and devoting more attention to the distribution of income amongst population groups. One way of doing this is through the use of social accounting matrices and the development of general equilibrium models. This is, of course, a long term objective and one that can only be assured once there is a satisfactory national data base. It does however provide the framework for identifying what data will be required. The effects of adjustment policy at the meso level and the impact at micro level will be measured through a series of social studies on separate but related subjects. Column 4 indicates the main data sources needed at each level. At the macro level, the primary sources include formal sector statistics. At the meso level, a key requirement will be for effective price information. This will need to be supplemented by enterprise and sector service surveys. In addition, the SDA project is proposing the introduction of a community level survey. At the micro level, the main sources of information will be household and informal sector surveys of which we shall have more to say in Part II.

13. When all the components are taken together, it is apparent that the complete information system as described above is an extensive one. Two points need to be made clear, however. The first is that in most countries, many of the elements of the system are already in place and being extensively used. The development of national statistical services has traditionally been based on a top down approach, from macro to micro. That is to say, the first priority has been to establish the means for generating national accounts at the macro level. This has involved not just the collection of government and formal sector statistics but also the execution of a certain number of surveys at the micro level (labour force surveys, agricultural surveys, etc.) that feed data into the national accounts. Many countries too have operational price collection services, and have undertaken household income and expenditure surveys to establish weights for the construction of consumer price indices. At the same time, the international community has been supporting a number of global statistical initiatives, such as the UN National Household Survey Capability Program (NHSCP), the International Comparison of Prices (ICP), the International Food and Nutritional Surveillance Program (IFNS), the Demographic and Health Survey Program (DHS), the Global Early Warning System, etc. The purpose of the SDA program is not in any way to replace or duplicate existing programs, but to make maximum use of them. The presence of an SDA program in a country, and in particular of a users committee, should in fact act as a catalyst to ensure better co-ordination of statistical programs and to identify gaps that need filling.

14. The second point to note is that it is not necessarily through the SDA program itself that the gaps will be filled. The SDA program may, for instance, identify the need in a country for better price collection. This does not mean that it has either the competence or the resources to set up the new system, but it can play a co-ordination role to ensure effective liaison and co-ordination between agencies and departments so that the gap is filled by the most competent authority.

15. One technical statistical area to which the SDA program has however devoted some considerable attention has been in the development of appropriate survey methodology for the collection of socio-economic data at the household or micro level. The main vehicle for this is an integrated multi-subject household survey.

II. DATA COLLECTION AND ANALYSIS AT THE HOUSEHOLD LEVEL

A. Background: The Living Standards Measurement Survey

16. The origin of the SDA interest in household surveys stems from work done by the Welfare and Human Resources Division of the World Bank on the design and implementation of household surveys in developing countries. The focus of the work was on establishing means of measuring living standards and studying poverty-related issues. In 1984, it developed a household survey and questionnaire, the Living Standards Measurement Survey (LSMS), which was first applied in Africa in Côte d'Ivoire in 1985. The survey was repeated over the three subsequent years and was also introduced to Ghana and to Mauritania. It was then agreed that these surveys should be co-ordinated by an operational project rather than a research project and so they were taken over by the SDA program.

17. The survey introduced a number of innovative features.

18. Firstly, the main objective of the survey was to measure standards of living at the household level. As such it was a single purpose survey, but in order to achieve this end, it had to be at the same time a multi-subject survey. The main subject areas covered were: income and expenditure, education, health, migration, housing, agriculture, non-agricultural household enterprises, consumption, transfers, savings, and anthropometry. Unlike some other integrated household surveys, it was not designed as a modular survey to which special subject modules could be attached or excluded at will, but was always intended to be a multi-subject survey in which all subjects were covered.

19. The second set of features of the survey were operational, namely the use of mobile enumeration teams instead of the traditional sedentary enumeration force. Five to eight mobile teams (depending on the country) consisting of one supervisor,

two (in some cases three) enumerators, and a driver were used to collect the data. Each unit was virtually self-contained in that it would have a specific and constant number of clusters and households to cover. The total sample size was thus a function of the number of teams and could be increased or decreased by adding or removing teams. In order to ensure adequate sample coverage, each survey round lasted for one year. During this period, a sample of 2,000 to 4,000 households could be enumerated. Each household would be visited by an enumerator twice with an interval of two weeks between visits. For most of the questions, data was collected, using as the reference period "the previous 12 months". For certain categories of expenditure and consumption data, the information was collected during the second visit to the household and the reference and recall period used was "since my last visit", i.e., a bounded recall period of two weeks.

20. The implications of using this methodology as far as the sample design was concerned were important since it made it possible to increase the number of clusters and reduce the number of households per cluster which resulted in significant improvements in sampling efficiency as well as commensurate decreases in costs, compared with the sort of sample design that would have been required if non-mobile enumerators had been used.

21. The third innovative feature of the survey was the decentralization of the data entry and editing process. Each mobile team operated out of a regional headquarters at which a micro computer was located. As soon as questionnaire forms were filled out, they were taken to the regional headquarters for data entry and editing. This process would be completed in under one week which meant that queries on the questionnaires that had been completed during the first visit to a household, could be referred back for verification during the second visit. Apart from improving the quality of the data that was finally entered, the system had the advantage of allowing the initial tabulations of the data to be produced very soon after the data had been collected. Indeed, it was possible to produce interim reports on the basis of the first six months of data collection even before the full survey was completed.

B. The SDA Household Survey Program

22. Despite the relative success of the LSMS survey in producing high quality data on living standards, it was recognized that, before the SDA embarked in any new countries, a full review of the survey methodology was needed. To begin with, the nature of the SDA program was fundamentally different from that of the LSMS, which was essentially research oriented. Secondly, as far as the SDA program was concerned, there were a number of limitations in the LSMS approach which needed to be addressed. On the basis of extensive discussions with African statisticians

and with other agencies and experts operating in the field of household surveys, a number of modifications to the original survey design were proposed. On the one hand, the survey was considered too limited because the sample was not sufficiently large, and on the other hand it suffered from limitations because the questionnaire was too large and unwieldy.

23. Although the need to have a multi-subject household survey feeding into the other elements of the SDA program is basically unquestioned what has been questioned has been the form that such a survey should take. Basically, it has been recognized that what is needed is a more flexible approach. The solution proposed by the SDA is that the survey can be undertaken in several forms. At one extreme, there is what may be called the intensive form - intensive, in that it uses a relatively lengthy and detailed questionnaire. Its purpose is to investigate, in detail, the complexity of the impact of the adjustment process on different household groups and the relationship between the macro policies and effects at household level. At the other extreme, the survey can be carried out in its extensive form - extensive in that it is administered to a larger sample of households, but uses a shorter and more limited questionnaire. These two manifestations of the household survey are, in actual fact, two fundamentally different but complimentary survey instruments - each having a somewhat different objectives. We shall for the time being refer to them respectively as the Intensive Household Survey (IHS) and the Priority Information Collection (PIC) survey and shall consider them each in turn.

C. The Intensive Household Survey (IHS)

24. The full household survey most closely resembles the original LSMS. It is aimed at providing a complete coverage of the full range of topics needed to better understand the mechanisms of the adjustment process at household level. These topics include: size and composition of the household; health, education and employment status of each household member; access to amenities and services; valuation of durable, productive and financial assets; productive activities, both agricultural and non-agricultural; income, transfers and savings; and food and non-food consumption and expenditures.

25. As noted earlier, the SDA is very specifically concerned with understanding the effects of adjustment programs on different groups of the population and with introducing the concept of social programs and policies targeted towards least favoured groups. The issue is a complex one. It involves refining and reclassifying the population, which is generally initially classified by broad socio-economic groups, firstly into vulnerable groups and then into specific target groups for policy and projects. This is one of the primary objectives of the IHS.

26. An initial classification of the population by socio-economic group will generally be made before the survey is undertaken and these groups will be used as stratification criteria in designing the sample so as to ensure adequate coverage of each group. Typical socio-economic classifications include: urban and rural population; small-holders (sometimes with sub-classifications by farming system, agro-ecological zone or holding size), female-headed household, etc. The classifications of households will usually be done at the cluster level but may also be done at the household level using data obtained from the listing exercise. The second level of classification, the identification of vulnerable groups will be based on an analysis of the survey data itself. Essentially this is a poverty classification which will identify the sub-groups of the original socio-economic groups lying on or below a given poverty line. The issues of how to establish the poverty line and the choice of index to be used to measure poverty are key analytical issues but ones which lie outside the scope of this paper. The third stage in the analysis is the study of the dynamics of the vulnerable groups both in terms of the extent and form of their vulnerability (i.e., whether their vulnerability is temporary or chronic), as well as in terms of how they have been affected by and are responding to the adjustment process. This finally provides the necessary input into the development of appropriate and targeted programs and policies.

27. Unlike the earlier LSMS surveys, the data generated through the IHS is to be processed and analysed in the countries themselves. In order to help countries with this task the SDA project is preparing a series of guidelines for sector specific analysis plans. The subjects covered by these analysis plans are those already shown in Table 1, namely: poverty, employment, migration, health, education, food security, and women in development. In the same way that prototype analysis plans have been prepared, so too has a prototype questionnaire been prepared by the SDA. This is not a rigid instrument however and can be extensively adapted and modified to suit individual country requirements and conditions.

28. Whilst the study of vulnerable groups of the population has been given as one of the main objectives of the IHS, it is by no means the only one. The survey must also be capable of meeting other national information priorities. It may for instance provide an important input into the national accounts or the establishment of weights for consumer price indices. Because it is a multi-subject survey, it can also be used to meet many of the objectives of traditional income, expenditure and consumption surveys, labour force surveys, informal sector surveys and so on.

A word of caution should be given however that, as with any integrated survey of this type, certain compromises always have to be made so that, for any one particular subject such as health, agriculture or literacy, it will not provide such a complete information base as a dedicated survey in that subject.

29. There are other disadvantages, namely that in certain respects it is a heavy survey in that it uses a large questionnaire which takes time to enumerate, process and analyse. There is also the issue of the sample size. One of the limitations of the IHS is that, because of the length of time needed to enumerate a single household, the total sample size will generally have to be kept to between 2,000 to 4,000 households. The sample size is adequate for providing estimates or aggregates at the national level or even sub-national (socio-economic group) level, as long as the number of such groups is kept to around 5 to 7. But, in order to monitor the behaviour of sub-groups within these socio-economic groups, a larger sample size is really needed.

30. Also, while it is a good vehicle for understanding the mechanisms of the adjustment process it is not a good monitoring tool and cannot provide planners and policy makers with the rapid feedback that they would like on the effects of adjustment program on the different household groups. For this reason, the SDA project is also helping countries to establish a permanent monitoring capability through a lighter extensive version of the household survey, which it has called the Priority Information Collection (PIC) survey.

D. The Priority Information Collection Survey (PIC)

31. The Priority Information Collection (PIC) survey is a fundamentally different type of enquiry from the IHS. It is a monitoring survey that is designed to provide a rapid indication of "what" is occurring without necessarily concerning itself with the issues of "why" - which is the role of the IHS. As a monitoring device the PIC should contain certain key features.

32. Firstly, the survey is intended to provide rapid results therefore the questionnaire needs to be kept limited and modest in size. Essentially, the survey should be concerned with the collection of socio-economic indicators. These are used to monitor changes in the circumstances of the various household groups and to flag potential problems punctually so that remedial actions can be taken. Although the PIC covers the same basic subject areas as the IHS (employment, health, income, etc.) the number of variables per subject area is very considerably reduced. The survey should aim to establish possibly no more than 5 or 6 indicators per subject area. The PIC sets, as a goal, an interview time not to exceed one hour. This very

considerable reduction in the length of the questionnaire implies more rapid processing and a simpler analysis - all of which helps to reduce the lag between data collection and the production of survey results.

33. Secondly, the use of a shorter questionnaire allows for an expansion of the sample size. The limitations of the IHS sample size have already been touched on. The PIC, being a rapid survey, can overcome this and can use sample sizes up to 8,000 or even 10,000 households. Not only can the PIC sample be made larger in absolute terms, but the design can also be made more efficient by reducing the adverse effects of clustering through an increase in the number of primary sampling units (PSUs). With a larger and more efficient sample, it then becomes possible to identify much more precisely the sectors of the population most at risk from adjustment and to strengthen the quality of the cross-sectional analysis.

34. Thirdly, for the PIC to act as an effective monitoring device, it must not only be concerned with cross-sectional analysis but also with time-series analysis and the detection of trends. It must consequently be a survey that is administered regularly - at least annually, possibly biannually. Like the IHS, the PIC is a survey that can be used to meet other national information needs including, for instance, providing rapid estimates of agricultural production, or providing an input into a nutritional surveillance program. In helping statistical offices to establish such a monitoring capability, the SDA project is again contributing significantly to institutional strengthening.

E. The relationship between the IHS and the PIC

35. We have mentioned already that the two versions of the household survey, the IHS and PIC, are complementary tools, one being used essentially for diagnostic purposes and the other for monitoring. To adequately monitor and evaluate the effects at household level of structural adjustment, both are needed and neither is substitutable. The manner in which the two survey are interlinked and the order in which they are executed may vary however from one country to the next and will depend frequently on the country's ongoing survey program, on its existing statistical infrastructure, and on its information priorities. Some statistical offices that are starting up an SDA survey program are, at the same time, committed to other national information priorities, such as updating the weights for the construction of CPIs or supplying improved household consumption data for national accounting purposes. Such needs can be accommodated within the framework of an IHS and consequently these countries are planning to undertake an IHS in the first year. It is unlikely however that they will want to repeat a full income and expenditure survey, such as the IHS, in the

following year. The logical step in such a case is to switch to a series of PIC surveys before returning to another IHS after say 3 or 4 years. One advantage of starting with an IHS is that the analysis of the first year's data will make it possible to identify what indicators appear to be most closely correlated with poverty and thereby to refine the selection of socio-economic indicators to be monitored in subsequent years.

36. The other approach which is being adopted in some other countries is to move straight into the monitoring process and start off with a PIC survey. Such a survey can be used straightaway to set down a baseline situation and, even using only a limited set of indicators, to identify what would appear to be the most vulnerable groups. Once these groups have been identified, a sample can be designed for the IHS using these groups as strata and the IHS can be implemented during the second year using varying sampling rates to ensure that these groups of special interest are covered in great depth. A particular attraction of starting off with a PIC survey is that such a survey is less demanding in terms of statistical and data processing infrastructure, and is therefore more suitable for countries that are starting out with more limited survey resources.

37. The most important principle to be retained however is that the IHS and the PIC surveys, although similar in many ways, are fundamentally different in terms of objectives. One is detailed and probing, whilst the other is light and rapid. There may be a temptation to believe that the two objectives of "monitoring" and "diagnosis" can be combined together and executed through a single survey, but this is not an effective proposition.

F. Community level surveys

38. Before leaving the subject of surveys, it should be recalled that since much of the analysis of the SDA data is concerned with the linkages between the three levels, macro, meso and micro, data is also needed at the meso level. There may already be on-going institutional and sectoral surveys as well as price collection activities operating in the country, in which case the data generated through these systems can be used in the SDA analysis, however the SDA is also proposing a community survey. This survey will in fact be very closely linked to the household survey and will be conducted at the same time and by the same enumeration teams that are covering the household survey. One community questionnaire will be filled out for each PSU in the household survey sample. The questionnaire will include information on availability and access to social services and amenities, local institutions and sources of employment, the market infrastructure and, naturally, market prices.

III. CONCLUSIONS

39. What then are the implications of the SDA project for statistics?

40. Firstly, at the regional level the program is a joint venture which brings together multilateral and bilateral donors as well as UN specialized agencies. In view of the fact that it is a multi-sectoral program, it provides a unique opportunity to promote co-ordination of the many statistical initiatives currently taking place in Africa. To this end, the project supports a regional Statistical Task Force to serve as a think tank for the development of the statistical component of the project, with input from various international agencies. The project also hosts technical workshops and seminars which provide an ideal forum for discussing the key issues with which statistical offices are currently concerned.

41. Secondly, the project is a source of technical assistance and more importantly, of training in all fields associated with the collection, processing, analysis and use of statistical data. To this end, the project has also set up a Training Task Force, similar to the Statistical Task Force, to promote co-ordination of training initiatives and the improvement of linkages between training institutions in the donor countries and institutions in Africa. The project is encouraging the development of a broad and varied training program, ranging from specific courses in such technical areas as data processing to regional workshops on data analysis and policy preparation using real case study material drawn from SDA surveys.

42. Thirdly, at the country level, the project supports the development of statistical services, not as an end in itself, but in the context of a country operational strategy which incorporates a policy component, a programs and projects component and finally an institutional development component of which the statistical services form a part. The main advantage of such an approach is that it treats statistical services as services which should be demand driven rather than supply driven and thus ensures better co-ordination between users and collectors of statistical data.

43. Finally, the SDA defines a key role for statistical offices to play in helping to integrate social dimensions into the design of macro-economic policies which will contribute to an overall raising of living standards in the participating countries.

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